Introduction to Computing by Tasting Raspberry Pi

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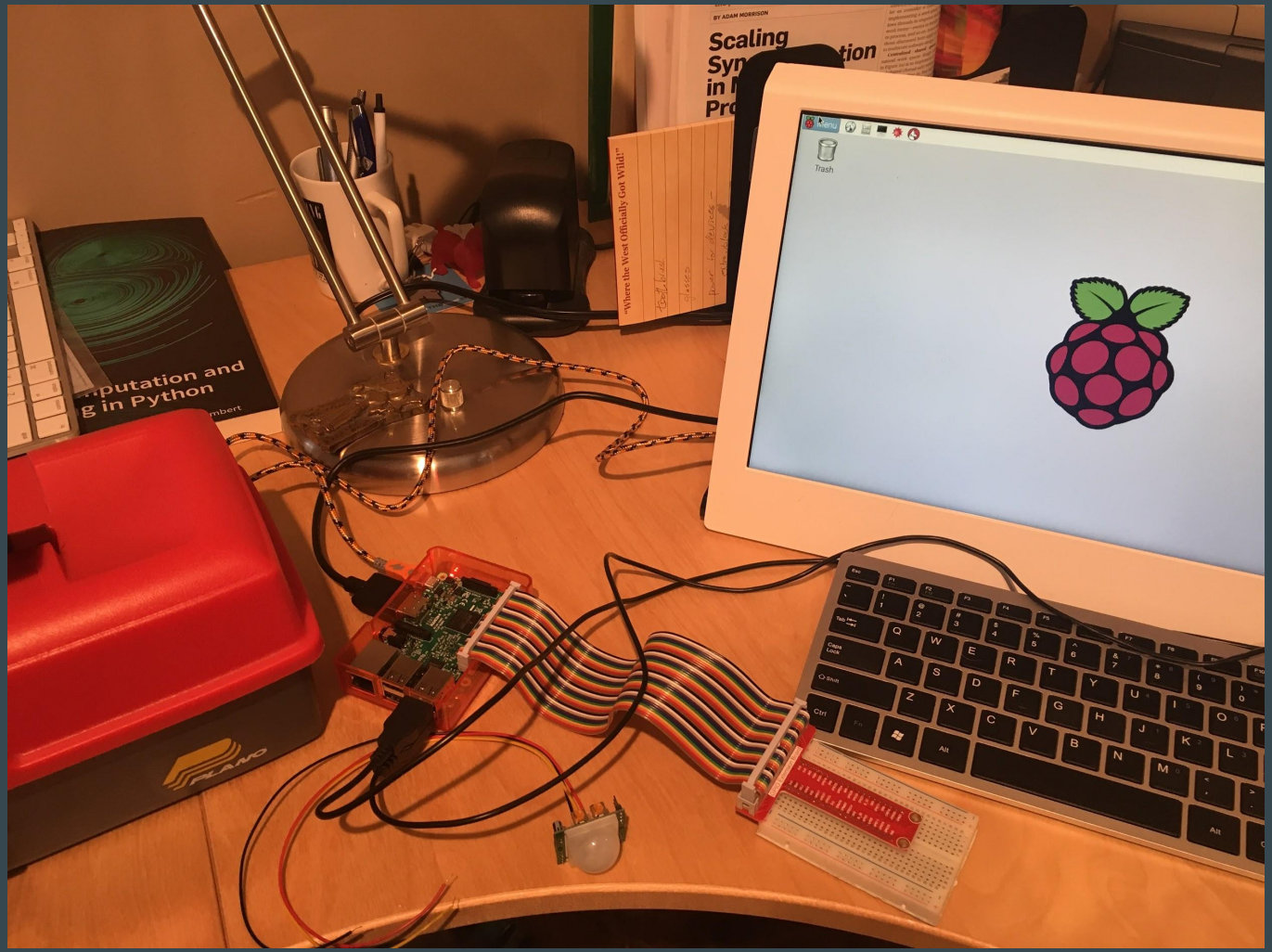
A first-year course

Context

- First semester course of 16 first-year students
- They live near each other in the dorms
- I am their academic advisor
- Met 2 days/week for 1.5 hours


CONSENT IS MAC

Each student received:


Scaling
Where the West Officially Got Wild!"
...putation and
g in Python
Trash
PLANO

Active classroom activities jupyter/iPython Notebook

- Daily directed exercises where they spend their time coding
  - First just Python
    - Using same activities as our traditional CS1 course
  - Then added use of connected devices
    - LED light
    - Button and touch switch
    - Joystick
    - LCD screen
    - Others

Projects: teams of 3 (except 2 singles)

- GoPiGo robot controlled with a joystick
- Home automation simulation
- Motion sensing
- Weather conditions from weather underground displayed on small LCD screen
- ‘Beatbox’ - buttons control music snippets
- Blackjack game
- Role-playing game

The good

- FUN!
- Collaborative work
  - In class
  - Outside class at the dorms

The not so good

- Setup time every class period
  - Was a hassle outside class for some: preferred their own computer, didn't like carrying toolbox and monitor
- Giving notebooks to them and turning in their work was challenging
  - OS doesn't support Google Drive or dropbox
  - Used box.com, which had webdav support (problematic)
- Students would have liked to use unix more